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No. 80-1765

IN THE

SUPREME COURT OF THE UNITED STATES

October Term. 1981

THE AMERICAN SOCIETY OF
MECHANICAL ENGINEERS, INC.,
Petitioner,

v.

HYDROLEVEL CORPORATION,
Respondent.

On a Writ of Certiorari
to the United States Court of Appeals
for the Second Circuit

BRIEF OF ADOLPH J. ACKERMAN, AMICUS CURIAE

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MOTION FOR LEAVE TO FILE BRIEF *AMICUS CURIAE* OF ADOLPH J. ACKERMAN

Pursuant to Rule 36(1) of the Rules of the Court, Adolph J. Ackerman, an independent Consulting Engineer with more than 50 years of active practice in his profession, is offering his brief as *amicus curiae,* out of a sense of duty to assist the Court in the analysis and interpretation of some highly complex professional responsibilities so that the Court will reach a decision which will serve the best interests of our country.

Amicus Curiae, since 1949 a member of the American Society of Mechanical Engineers (ASME),

the petitioner, is deeply concerned about the issues raised in this case, and about the final outcome. At stake is the high stature of one of America's most important Societies in the engineering profession, along with the continuing trust and confidence of the public in that Society.

This high stature and trust has been earned during the past century by demonstrating exceptionally high leadership in engineering responsibility and professional ethics in the field of mechanical engineering and in defense of public safety.

Amicus curiae proposes to file a brief to identify these ethical commitments and professional responsibilities of ASME members, which he believes have not been adequately identified to the Court. On this basis *amicus curiae* has petitioned the President of ASME to grant his consent on behalf of the Society, but to date this has not been received. A copy of the request to the President of ASME has been filed with the Clerk of the Court, and this Motion is being offered to permit the timely filing of the *amicus curiae* brief.

Consent of the respondent, Hydrolevel Corporation, has been received and a copy is also being filed with the Clerk of the Court.

Dated this 20th day of October, 1981.

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2. "Slow Death of a Free Profession," Adolph J. Ackerman, IEEE TRANSACTIONS-AES, Vol. AES-7, No. 3, May 1971; and "Using Engineering to Enslave You," Adolph J. Ackerman, CIVIL ENGINEERING-ASCE, Vol. 34, No. 7, July 1964.

3. Earl Warren, Chief Justice, Address to the Louis Marshall Dinner of the Jewish Theological Seminary of America, New York, N.Y., Nov. 12, 1962.

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Pursuant to Rule 36 (1) of the Rules of the Court, Adolph J. Ackerman, an independent Consulting Engineer with more than 50 years of active practice in his profession, submits this brief as *amicus curiae*, out of a sense of duty to assist the Court in the analysis and interpretation of some highly complex professional responsibilities so that the Court will reach a decision which will serve the best interest of our country. (Appendix A)

INTEREST OF *AMICUS CURIAE*

This brief is offered as a voluntary contribution, based on *amicus curiae's* knowledge and experiences on the questions placed before the Court. It is offered in compliance with the personalized professional responsibilities of an engineer and in compliance with his ethical obligations which have so notably been identified by a former Chief Justice, as restated later in this brief.

Although *amicus curiae* has attempted to present to the Court his judgment, and his ethical commitments to the public interest, by first reviewing the total documentation before the Supreme Court, the rules of the Court have prevented this because they require a filing not later than the Respondent's brief.

It is recognized that the legal concept of responsibility and liability of a professional society, as stated in the decision of the Court of Appeals, is being viewed with deep concern by many service organizations who rely for their functioning on the voluntary assistance and support of the members. But in the practice of the engineering profession there must be legal standards of responsibility by which to fairly evaluate successes, or fairly punish deficiencies and failures.

In this "Hydrolevel case" the lower courts found that there was a failure on the part of the American Society of Mechanical Engineers (ASME) to perform within the bounds of the law, and they granted a financial award to Hydrolevel. Under such circumstances it is within the resources of the Society's Governors to meet its obligations through an assessment on the members. In this way the consequences of a failure in administration can readily be met and effectively communicated to the members.

QUESTIONS PRESENTED BY THE PETITIONER

1. Whether a nonprofit, voluntary membership organization may be found liable for "unintentional participation" in a conspiracy to restrain trade and to monopolize, in violation of Sections 1 and 2 of the Sherman Act, on a theory of negligence.

2. Whether a nonprofit, voluntary membership organization is strictly liable under the antitrust laws for all acts of its volunteer members within the scope of their "apparent authority," when (a) the acts were neither authorized nor ratified by the organization, (b) the members did not intend to and did not in fact, benefit the organization by their actions, and (c) the members actively deceived the organization for their own purposes and benefit.

SUMMARY OF ARGUMENT

The issue in this case relates to a branch of engineering for public safety which is uniquely associated with the American Society of Mechanical Engineers (ASME), and with no other branch of engineering and with no other professional society. This branch relates to the design, fabrication, and operation of steam boilers under high pressures and temperatures, and to the related appurtenances and devices designed to safeguard against explosions.

This branch of engineering and the great resource of experienced manpower have grown up during the past six decades through the development and application of engineering standards which became known as the ASME Boiler Code, and in close collaboration with an insurance company which has been willing to write 100% insurance protection against explosions of boilers which comply with this Code.

The present case has arisen out of the collusive mal-administration of this Code to the advantage of one manufacturer of a safety device for steam boilers, and to the injury of another. In view of the great responsibilities for the public safety involved in the administration of the ASME Boiler Code, the court must consider what effect this case will have in strengthening the Society's administrative structure for the safety of future generations.

ARGUMENT

HISTORICAL BACKGROUND

The petitioner in this case is The American Society of Mechanical Engineers (ASME), a nonprofit engineering society founded in 1880 for the purpose of enhancing the use of mechanical engineering in the public interest. The respondent is Hydrolevel Corporation, now defunct, which undertook to manufacture a "low-water fuel cut-off valve" in compliance with the technical and operating standards established in the ASME Boiler Code and in competition with a similar device which for many years had been manufactured by McDonnell & Miller, Inc. (M&M).

Petitioner is challenging the decision of the Second Circuit Court of Appeals in the case known as Hydrolevel Corporation v. The American Society of Mechanical Engineers, Inc., 635 F.2d 118 (2d Cir. 1980). This court held that nonprofit voluntary associations are liable under the federal antitrust laws for the improper and unauthorized acts of their volunteer members who have "apparent authority."

The case is focused on the improper issuance and subsequent misuse of a single letter, written by a volunteer member of ASME interpreting an ASME standard of performance, to the disadvantage of

Hydrolevel. Subsequently, Hydrolevel was driven into bankruptcy. The misconduct is focused chiefly on two members of ASME, who served in a volunteer capacity as Chairman and Vice Chairman, respectively, on one of the important subcommittees in the administration of the ASME Boiler Code. The possibility of their conflict of interests was indicated in their respective employment capacities, one as Vice President of M&M and the other as Executive Vice President of Hartford Steam Boiler Inspection and Insurance Company.

On August 19, 1975, Hydrolevel filed this suit in the United States District Court for the Eastern District of New York against ASME and two co-defendants: The International Telephone & Telegraph Company (ITT) which had purchased M&M in December 1971, and against Hartford Steam and Boiler Inspection and Insurance Company. Prior to trial, ITT and Hartford settled the charges against them for $725,000 and $75,000, respectively, and an amended complaint was filed naming ASME as the sole defendant. (This indication of an admission of guilt by the two former co-defendants has not been explained in the present record.)

The petitioner's attorney presents comprehensive legal citations in support of ASME, but erected on a narrow base of legal citations and devoid of the ethical obligations which serve as the foundation of ASME's professional responsibilities and of the public's confidence in ASME.

It is argued that:

> "Plenary review of this case should be granted because it raises novel and major issues of interpretation of the Sherman Act relative to the liability exposure of nonprofit, voluntary professional organizations for the unauthorized acts of their members. ... The case before the Court is an appropriate one under its clear

> facts to enable the Court to provide guidance for nonprofit voluntary member organizations in their future activities in the developments and application of technical codes and standards. ... The Court is called upon to 'resolve the important issue of organization liability for self-serving acts of its volunteer members serving on committees which carry out functions of the organization.'"
>
> — Brief *Amicus curaie* of The National Society of Professional Engineers

ASME'S GREAT ACHIEVEMENT

It is claimed that the technological progress of the United States in the past hundred years, or more, has rested in substantial part on the development and use of the voluntary standards system. But this broad generalization is quite different from the remarkable progress achieved under the ASME Boiler Code, combined with 100% insurance coverage against explosion of boilers which comply with the Code in their manufacture and operation.

In view of the success of this unique joint venture with an insurance company a brief review of its origin and historical development is warranted.[1] The story begins back in 1866 when Jeremiah Merwin Allen, then Steward of the American School for the Deaf in Hartford, Connecticut, founded the first boiler insurance company in America, The Hartford Steam Boiler Inspection and Insurance Company. This was patterned, in part, after a similar company established in 1858 in England. During the first fifty years the

[1] "America's Abundant Electricity and the ASME Boiler Code." Adolph J. Ackerman, Member IEEE and ASME, IEEE TRANSACTIONS-AES, Vol. AES-15, No. 6, Nov. 1979, David B. Dobson, Admin. Editor.

company's growth was very slow, whereas the use of steam power was growing rapidly.

Across the nation there were thousands of steam boilers and steam engines in the small factories, and there were the steam boilers in the railroad locomotives, threshing machines, river steamboats, harbor tugboats, and in the large steam ships on the ocean. It was the era of steam boilers of all sizes and designed for a wide range of steam pressures. But there were also many failures and explosions of steam boilers. An insurance executive in May 1912 noted: "Every year there occur in the United States between 1300 and 1400 serious boiler accidents, of which 300-400 are violent explosions. These accidents kill between 400 and 500 persons, injure 700-800 more, and destroy vast amounts of property."

Growing public concern and protests motivated the nation's boiler-makers in 1888 to form the American Boiler Manufacturers Association (ABMA). The prime objective of this organization was "... to establish such standards for materials and workmanship as will insure uniform excellence of construction of all American boilers, and thus secure safety to the lives and property of all communities where boilers are used, and to procure the passage of laws making the manufacture, sale, or use of inferior materials, criminal offenses." This reflected the manufacturers' realization of their moral responsibility. However, efforts to have the members of ABMA approve a uniform set of construction rules were not successful, illustrating that, even though the boiler-makers recognized their responsibility, not all of them were willing to abide by a set of voluntary rules.

In 1911, the President of The American Society of Mechanical Engineers, Edward D. Meier, convinced the Society that its reputation and broad scientific interests, which made it commercially disinterested,

should enable it to formulate a set of rules, or a Code, acceptable to the manufacturers and which might be adopted by all the states as a basis of their laws pertaining to boilers and pressure vessels.

The first ASME Code, entitled "The Rules for the Construction of Stationary Boilers and for Allowable Working Pressures," was adopted by the Council of ASME in the Spring of 1915. The committee that formulated these rules subsequently was enlarged and designated as the ASME Boiler Code Committee.

Soon after the introduction of the ASME Boiler Code, various state legislatures proceeded to enact legislation requiring boilers and unfired pressure vessels to be installed and operated under the safety standards of the ASME Boiler Code; administration is in the hands of State Boiler Inspectors.

During the past sixty years the development and application of the ASME Boiler Code has been truly miraculous. Today, the ASME Boiler Code Committee and its many subcommittees provide interpretations, rulings, revisions, and additions to the Code on a wide range of critical details of design, fabrication, riveting, welding, metallurgy of steel and welding rods, inspection, stress relieving, pressure testing, and in-service operation. The two most important factors in this progress have been (1) the nationwide buildup of experienced manpower in engineering and in the manufacture of safe steam boilers, and (2) the parallel growth of the services performed by the Hartford Steam Boiler Inspection and Insurance Company. Hartford engineers have at all times maintained active membership on the ASME Boiler Code Committee.

The Hartford Company relies on close inspection of all details in the fabrication of a boiler and its installation and subsequent operation, all in accordance with the ASME Boiler Code. By this means the

company has developed its confidence to write full insurance coverage against explosions, both for the owner of the boiler and for third parties in the vicinity of a power plant, while maintaining its financial stability. The company offers a remarkable demonstration of what can be achieved under our American system of free enterprise by a few men who are endowed with the basic qualities of integrity, imagination, and initiative in serving the best interests and safety of the public.

When a Hartford shop inspector approves a completed boiler he is authorized to emboss on it the official "ASME emblem for steam boilers" as a certification of compliance with the Boiler Code. Furthermore, with this stamp on a boiler the State Boiler Inspector is authorized to approve the installation and operation of that boiler. As a symbol of public safety this simple ASME stamp has earned for itself a nation wide public trust. Most importantly, the dangers of serious boiler explosions have been reduced to almost zero. The ASME Boiler Code may well be regarded as the greatest achievement in the history of the American engineering profession.

The story of ASME's great contribution to the miracle of America's abundant electricity supply can be communicated most readily in two graphical charts: Appendix B shows the dramatic decline in boiler explosions following the introduction of the ASME Boiler Code in 1920, despite the rapid increase in steam pressures. Appendix C shows the tremendous growth in electric generating plants from 1920 to 1975 primarily through the installation of safe and insurable steam boilers.

From this perspective we can now look back and recognize the exceptional vision and courage of Jeremiah Merwin Allen as the founder of The Hartford

Steam Boiler Inspection and Insurance Company and of ASME's Past-President Edward D. Meier, a great engineering leader with high ethical commitments in defense of public safety.

Edward Meier's greatness is reflected in his address upon assuming the presidency of ASME in 1910, in which he declared:

> "Engineering is the profession of the present, and will dominate the future. The engineer is a devout believer in natural laws. He knows that they are immutable and permit no exceptions. Every infraction of them brings its own punishment. To lie is not only wicked, it is ineffectual, absurd and ridiculous. To tell the truth is not merely laudable and salutary, it is essential and necessary. To men thus trained, the future of the race is to be confided."

The ASME Boiler Code is the Society's most important activity and the only code that has been created as a joint venture of a professional society and of an insurance company. ASME has administered the technology and engineering of insurance coverage. This has grown up as a solid "marriage." Only what ASME has specified in its Code for the design, fabrication, and operation of a boiler, and has been declared insurable by Hartford, may be embossed with the ASME symbol of approval and declared "safe and insurable."

In terms of Hartford's financial responsibility for public safety against damages from explosions, and in association with ASME's services, ASME stands uniquely alone and no other Society offers such a definition of "safety." In the current technological era other Societies, Institutes, and Associations have grown up as imitators of ASME by offering "standards," but without responsibility in the event of failures.

In summary, the ASME Boiler Code occupies a unique position because of the dedicated services by responsible engineers in defense of the public's interest and safety. Of equal importance is the associated financial risk-taking by Hartford.

THE DECLINE OF ENGINEERING RESPONSIBILITY

The regrettable position in which ASME finds itself due to the present litigation is symptomatic of a general decline of the stature of the engineering profession at large, as described more fully in a study "Slow Death of a Free Profession."[2] This is manifesting itself in the censorship of controversial issues in the journals of engineering societies, in the silence of many university faculties of engineering on controversial public issues, in the silencing of "dissent," as acknowledged editorially in "Duty to Dissent" (Appendix A), and in the trend towards "freedom from responsibility."

In contrast with the aggressive initiative in defense of public safety, as was demonstrated in earlier times by ASME's distinguished leaders in the adoption and implementation of the ASME Boiler Code, the current retreat from personalized professional responsibility in engineering is one of the great tragedies of this century.

This retreat is further indicated in ASME's current petition for a Writ of Certiorari. ASME mobilized the support of 15 *amici curiae* and sought to place these Societies on the same level of responsibility as ASME's "certification of safety," although none of them offer proof of insurability and financial responsibility under their "standards."

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[2]see page 13.

DEFINITION OF "RESPONSIBILITY"

In the case of an engineering failure, the question that ultimately must be answered is "*who* was responsible"? This is strictly a personalized question on which Vice Admiral Hyman G. Rickover, USN, has given the engineering profession a clear definition:

> "Responsibility is a unique concept: it can only reside and inhere in a single individual. ... Unless you can point your finger at the man who was responsible when something goes wrong, then you have never had any one really responsible.
>
> "Service ceases to be professional if it has in any way been dictated by the client or employer. Professional independence is not a special privilege but rather an inner necessity for the true professional man, and a safeguard for his employers and the general public. Without it, he negates everything that makes him a professional person and he becomes at best a routine technician or hired hand, at worst a hack."

This concept of an engineer's responsibility, together with the confidence of the public in the engineering profession, comprises a rich heritage which stands as the primary bulwark for the protection of the public in the application of science and technology.

Regrettably, however, this concept of responsibility is not being perpetuated in the new postwar technologies, and the engineering profession is allowing itself to be subordinated to governmental authority. During the past decades we have seen many proposals for impressive scientific and engineering projects, but they are being promoted under political domination, completely devoid of financial respon-

sibility, and under deliberate censorship of any opposition. The net result is a breakdown in the areas of professional responsibilities, ethical standards, the Rule of Law, public safety, financial controls, and the accounting for public funds. The position of "Chief Engineer" has largely disappeared from the public domain and from engineering journalism.

This tragic situation reaches back more than three decades, according to a book published by ASME in 1947 under the title *Scientific Blacksmith*. Its author, Mortimer E. Cooley, former Dean of Engineering at the University of Michigan, wrote:

> "The engineers of the nation have failed to take advantage of the opportunity to play a more active part in our national government. This has seemed to me a real tragedy. ... As the matter now stands, the engineer creates the problems of his accomplishments, yet leaves the solutions to the economist, the businessman, the politician, and the statesman, who understand none of the technical phases of the problems. ... The engineer has played a passive part. ... He has been content in his field; in fact, he has gone to sleep on the job. He has been asleep nearly as long as was Rip Van Winkle."[2]

This is in stark contrast with the concept of "engineering responsibility" demonstrated on March 12, 1924 when the St. Francis Dam in California broke, resulting in the loss of 450 lives. The Chief Engineer who was responsible for the design and construction of

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[2]"Slow Death of a Free Profession," Adolph J. Ackerman, IEEE TRANSACTIONS-AES, Vol. AES-7, No. 3, May 1971; and "Using Engineering to Enslave You," Adolph J. Ackerman, CIVIL ENGINEERING-ASCE, Vol. 34, No. 7, July 1964.

this dam, William Mulholland, after 40 years of leadership in his profession, declared:

> "Don't blame anybody else. Whatever fault there was on this job, put it on me. If there were any errors in judgment — and it's human to make mistakes — the error was mine. I envy only those who are dead."

THE ASME CODE OF ETHICS

Ethics has been defined as the Science of Morality. The Society's fundamental principles of professional engineering ethics are defined in these words:

> The Engineer, to uphold and advance the honor and dignity of the engineering profession and in keeping with high standards of ethical conduct:
>
> I. Will be honest and impartial, and will serve with devotion his employer, his clients, and the public;
>
> II. Will strive to increase the competence and prestige of the engineering profession;
>
> III. Will use his knowledge and skill for the advancement of human welfare.

For an engineer wishing to enjoy the prestige of membership in ASME, and to take part in the responsibilities and objectives of the Society, he must commit himself unreservedly to upholding its Code of Ethics. This commitment assumes even greater importance when a member is elected to serve as one of the Society's officers. At that level these distinguished engineers, in addition to directing the many functions of the Society, have the additional duty of serving as a judiciary in upholding the Society's moral and

professional standards in the application of science and technology. They also have the painful duty of passing judgment on a member charged with violating the Code of Ethics.

From this perspective the Society's Board of Governors is placed on the same level of responsibility for our nation's well-being and security as is placed on the Justices of the Supreme Court, and the President of the Society holds the same status as the Chief Justice in defending the Constitution of the United States. In this context the President of the Society, with the approval of the Board ofGovernors, could approach the Court on his own responsibility and assist the court in reaching a wise judgment, instead of looking to the Society's attorney to find some limited legal premise for dismissing the pending penalty.

The importance — even the indispensability — to society of those who will identify their ethical obligations in a time of confusion, and act on them, was reviewed by the late Chief Justice, Earl Warren, in these notable words:

> "Society would come to grief without Ethics, which is unenforceable in the Courts, and cannot be made part of Law. ... Not only does Law in civilized society presuppose ethical commitment; it presupposes the existence of a broad area of human conduct controlled only be ethical norms and not subject to Law at all. ...
>
> "The individual citizen may engage in practices which, on the advice of counsel, he believes strictly within the letter of the Law, but which he also knows from his own conscience are outside the bounds of propriety and the right. Thus, when he engages in such practices, he does so not at his own peril — as

when he violates a Law — but at peril to the structure of civilization, involving greater stakes than any possible peril to himself.

"This Law beyond the Law, as distinct from Law, is the creation of civilization and is indispensable to it. ...

"A person able to discern the right in the midst of great confusion and to pursue it, is a person of character. A person may be learned or ignorant; he may be old or young, rich or poor, well or sick; whatever his condition he has to act, and his actions have their effect on himself and generally also on his fellow men.

"The education of both ministers of religion and of lay specialists, qualified to help the confused find himself in the maze of ethical problems is, in my opinion, one of the urgent needs of Western democracy, as it attempts to preserve its tradition of freedom in competition with rival systems of life."[3]

DECISION OF THE COURT OF APPEALS

In this brief the historical background has been presented to identify the magnitude of the responsibilities which have grown up in ASME at all levels, from the individual members, from the committees, to the administrators of the ASME Boiler Code and to the Board of Governors of the Society.

The Court of Appeals has sensed the importance of these responsibilities and has indicated that its decision was based on "a theory of negligence." The panel stated:

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[3]Address to the Louis Marshall Award Dinner of the Jewish Theological Seminary of America, New York, N.Y., Nov. 12, 1962.

> "While ASME may have no alternative to staffing its committees with business people having practical knowledge, there is a corresponding duty to be aware of and guard against the temptations thus afforded by inherent conflicts of interest. Absent from internal review procedures, no individual should be empowered to rule dispositively on the fitness of a competitor's product. When an organization has placed a person in a position to do what Hardin did, without any check or supervision, it must bear the consequences."

In the total documentation presented to the Supreme Court by the petitioner and by the fifteen supporting *amici curiae*, this relatively obscure citation merits special attention. It is claimed that

> "the Court of Appeals' holding imposes vicarious liability based on a theory of apparent authority ... and imposes an awesome penalty in the absence of the organization having ratified, acquiesced in, or even having known of the illegal activity."

In addition, it may be argued that the Hydrolevel enterprise was a relatively small one and that any penalty, if shown to be proper, should be correspondingly small. But the fact remains that the Hydrolevel product was an important link in a chain tied to great responsibilities to protect the public against the peril of explosion of a huge steam boiler under high temperatures and pressures. In the context of such awesome responsibilities, as they may involve many human lives, it could be argued that the penalty imposed by the District Court is not too large.

The criticism has been introduced:

> "Despite the plethora of contrary authority, the Second Circuit Court of Appeals

> employed a novel approach to agency concepts which has exposed ASME to antitrust treble damages. ... The court's rationale for its new standard was that it would 'induce greater care to prevent misconduct by agents occupying especially sensitive or responsible positions that invite reliance.' ..."

However, this rationale reflects a rare perception on the part of the Circuit Court regarding the greater surveillance and attention to detail demanded in the new and terribly dangerous technologies. Here the Rule of Law is still in its infancy and the public must place its reliance on the ethical disciplines and professional obligations of competent engineers. In these terms the Second Circuit Court has offered a warning of exceptional importance. In fact, the Court is deserving of a special tribute for its perception and recognition of the possibilities and dangers from obscure types of malpractice or exploitation of the industrial community and of the public's confidence.

It can be shown that the relatively "small" misconduct committed against Hydrolevel was preceded by a more serious violation and with the tacit acceptance at ASME's administrative level. This acceptance must be inferred from the absence of repudiation and from the absence of disciplinary actions against a clear violation of the ASME Boiler Code.

OUR NATION'S GREATEST PERIL

Today, our freedom to apply our professional services and ethical commitments for public safety is being progressively undermined by political, governmental, and subversive usurpation. Our nation can be brought to its knees by the simple process of destroying the disciplines which Jeremiah Allen and

Edward Meier bequeathed to the electric power industry. In the current technological revolution the leaders in our engineering profession, and our public leaders, are confronted with an obscure peril founded on the suppression of personalized professional responsibility and the suppression of our ethical obligations to future generations.

The engineering and industrial capabilities that have created the great miracle of America's electric power supply are taken for granted to such an extent that that American public is hardly aware of these great resources.

However, the night-time air traveler is bound to experience a new wonderment and awe as he looks down upon the continuous patterns of lights which identify the great cities, the towns, the villages, the farmhouses and the inhabitants along all the rivers. These beautiful illuminations offer a dramatic picture of a great nation and its industrious people. They also reflect the faith of the American people in their electric light and power supply, and in the dedicated public service of the personnel working day and night to produce the electricity.

And beyond all this stand the thousands of unseen engineers who have contributed their skills to the design, construction, and operation of safe steam-electric generating plants. The engineers have committed themselves to carrying out their responsibilities with first consideration for the *public's safety.* It is a professional service of which the American people are largely unaware — or, perhaps, their silence is a demonstration of their faith and confidence in the engineering profession.

It is a great public trust! It is a trust in the power of dedicated service to our nation under our God-given blessings of American liberty and free enterprise.

CONCLUSION

The ASME Boiler Code and the Code of Ethics for the conduct of its members are founded on the fundamental principle of personalized professional responsibility.

The present case is concerned with highly specialized responsibilities which have been built up and refined during a period of 70 years at a constant rate of progress and success. These responsibilities are the product of intellectual honesty in engineering and of the severe disciplines imposed by a private insurance company. In the present case ASME is saying that the society should not have accountability for its work. It is difficult to visualize the chaotic consequences to the entire engineering profession if the societies and their committees were to be relieved of their internal disciplines and responsibilities. The petition should, therefore, be denied.

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October 1981

APPENDIX

APPENDIX A

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

VOLUME 4 ☐ NUMBER 6 IEEE **spectrum** JUNE 1967

Editorial Board

C. Chapin Cutler *Editor*

Spectral lines: Duty to dissent

As an engineer, you have a responsibility to decide what is safe and for the public good. You must tell what you know through whatever avenues you can find

Duty to dissent. Of the many letters that come to this office, none have been more thought provoking than a letter appearing in this issue (see IEEE forum)*, in which Adolph J. Ackerman reproves professional journals for avoiding controversial issues, for giving the "silent treatment" to the voice of dissent.

Is it true, as he states, that editorial space for presentation of an unpopular viewpoint is virtually impossible to obtain in a reputable technical journal? Alas, it is true—although not because editors are necessarily contrary or stupid, or even timid. Our very methods of refereeing (i.e., having submitted papers judged by peers) militate against publication of articles about which there is substantial disagreement, as does the natural inclination of editors to publish that which they believe subscribers want to read. Dissenting opinions are likely to be unpopular. The strong desire of technical and scientific people to advance their profession and avoid political controversy is another deterrent. But perhaps the greatest hindrance to such publication is provided by the wish to present what is true, logical, and authoritative—and the voice of dissent seldom fulfills this requirement.

The editorial staff of any journal faces a difficult task in selecting papers. It is inevitable that some good papers will be rejected; that some bad ones will be published. However, recognizing the natural prejudice against unpopular causes, and their possible importance, editors should try very hard to give "equal time" to the dissenting voice. The challenge to recognize virtue in a dissenting viewpoint, to differentiate between prophet and crank, is a formidable one. The voice of dissent should be heard, however, and not only through correspondence columns.

A more serious, and even more basic, fault is the reluctance of most individuals to express their convictions publicly, and thus do their part as the conscience for our profession. The main reason that we don't hear much of the unpopular viewpoint is that dissent is seldom avail-

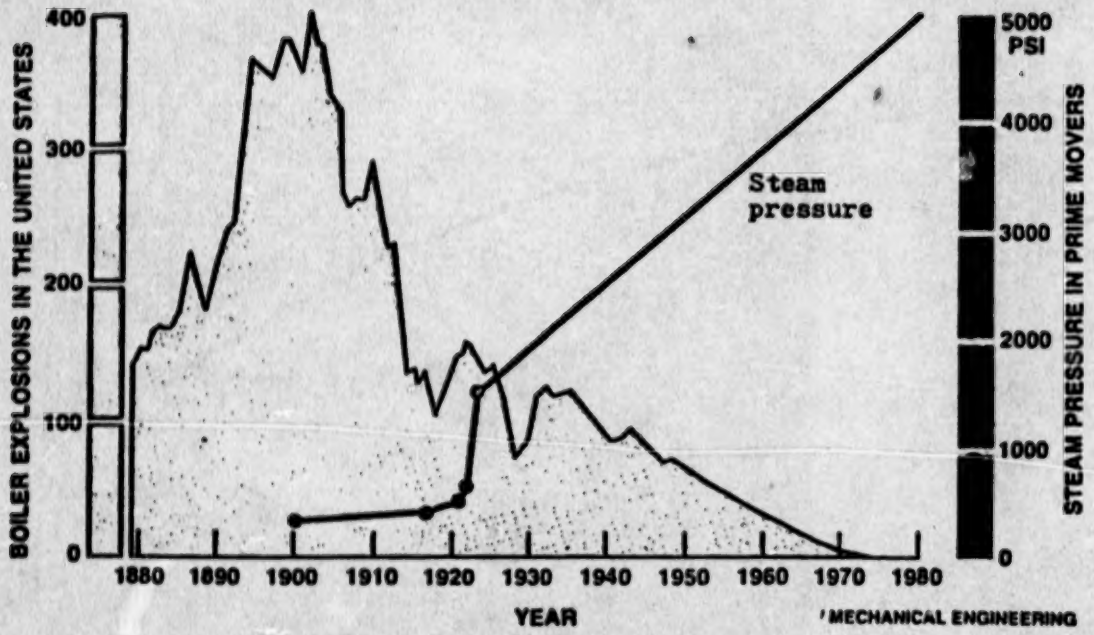
able in publishable form. Few will make the effort that Mr. Ackerman has made, to warn, publicly, of what is believed to be dangerous practice. It is not enough to grumble to our colleagues, or to write anonymous letters, as many do. What is required is clear, logical exposition, loaded with *facts* and backed by character. What we need most is the individual motivation to take the personal responsibility, as does Mr. Ackerman, to "record a dissenting opinion where the public interest is at stake."

It was not engineers who mounted the assault on pollution, but surely it was engineers who first knew what was happening to our water and to our air. It was not engineers who forced the program of safety in automobile design; but who was more aware of the problem? Who better than the engineers involved knew of the dangers in the Apollo spacecraft design and could have issued more effective warnings? Who can better police extravagant proposals for government contracts than the engineers,[1] and indeed, who can better tell us of the deficiencies and dangers in atomic power plants than the engineers who design them?[2]

Engineers have a responsibility that goes far beyond the building of machines and systems. We cannot leave it to the technical illiterates, or even to literate and overloaded technical administrators, to decide what is safe and for the public good. We must tell what we know, first through normal administrative channels, but when these fail, through whatever avenues we can find.

Many claim that it is disloyal to protest. Sometimes the penalty—disapproval, loss of status, even vilification—can be severe. The penalty for neglect of this duty, however, can be much more severe. Ackerman, in a published article,[3] quotes from Herbert Hoover[4]: "Our greatest danger is not from invasion by foreign armies. Our dangers are that we may commit suicide from within by complaisance with evil. Or by Public tolerance of scandalous behavior. Or by cynical acceptance of dishonor. These evils have defeated nations many times in human history. The redemption of mankind by America will depend upon our ability to cope with these evils here at home." Ackerman concludes: "Today we need more critical pronouncements and published declarations by engineers in high professional responsibilities. In some instances such criticism must be severe if we are properly to serve mankind and preserve our freedom. Hence it is of utmost importance that we maintain our freedom of communication in the engineering profession and to the public. The decades ahead are bound to be a critical and difficult period, and there will be occasions for sharp dissent and strong words if we are to meet our responsibilities."

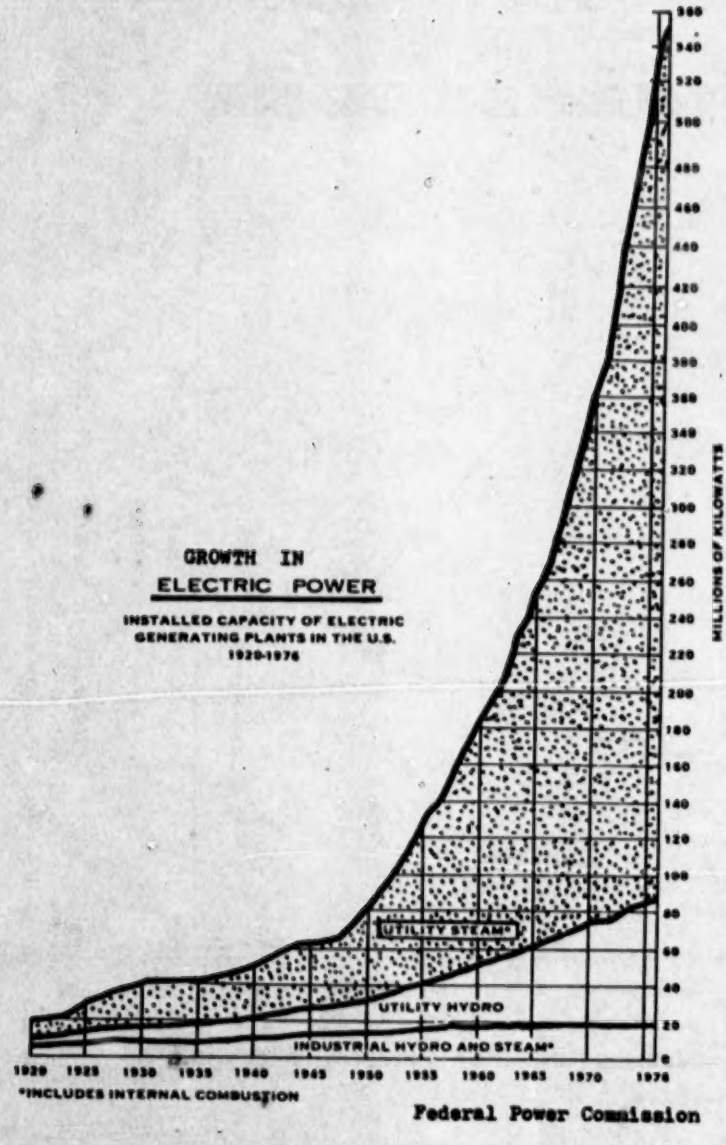
C. C. Cutler



DECLINE IN BOILER EXPLOSIONS

Fig. 1 There has been a dramatic decline in boiler explosions — even though steam pressures have steadily increased — because of the effective application of ASME codes and standards.

APPENDIX C


GROWTH IN
ELECTRIC POWER
INSTALLED CAPACITY OF ELECTRIC GENERATING PLANTS IN THE U.S. 1920-1976
MILLIONS OF KILOWATTS
UTILITY STEAM*
UTILITY HYDRO
INDUSTRIAL HYDRO AND STEAM*
1920 1925 1930 1935 1940 1945 1950 1955 1960 1965 1970 1976
*INCLUDES INTERNAL COMBUSTION
Federal Power Commission